


**De:** PLOS ONE em@editorialmanager.com   
**Asunto:** PLOS ONE Decision: Revision required [PONE-D-21-10984R1] - [EMID:121df65fa2aaf211]  
**Fecha:** 25 de enero de 2022, 10:06  
**Para:** Antonio Malo Larrea tonhomalo@gmail.com

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PONE-D-21-10984R1  
Looking inside the Blackbox: Cuenca's water metabolism  
PLOS ONE

Dear Dr. Malo Larrea,

Thank you for submitting your manuscript to PLOS ONE. After careful consideration, we feel that it has merit but does not fully meet PLOS ONE's publication criteria as it currently stands. Therefore, we invite you to submit a revised version of the manuscript that addresses the points raised during the review process.

Both reviewers agree that the manuscript has notably improved but there are remaining issues, including most importantly, the need to revise the decision to delete the discussion on the added value, and double-check the calculations of Figure 4, among other more minor aspects. I may not send the manuscript again for review but revise your response myself.

Please submit your revised manuscript by Mar 11 2022 11:59PM. If you will need more time than this to complete your revisions, please reply to this message or contact the journal office at [plosone@plos.org](mailto:plosone@plos.org). When you're ready to submit your revision, log on to <https://www.editorialmanager.com/pone/> and select the 'Submissions Needing Revision' folder to locate your manuscript file.

Please include the following items when submitting your revised manuscript:

- A rebuttal letter that responds to each point raised by the academic editor and reviewer(s). You should upload this letter as a separate file labeled 'Response to Reviewers'.
- A marked-up copy of your manuscript that highlights changes made to the original version. You should upload this as a separate file labeled 'Revised Manuscript with Track Changes'.
- An unmarked version of your revised paper without tracked changes. You should upload this as a separate file labeled 'Manuscript'.

If you would like to make changes to your financial disclosure, please include your updated statement in your cover letter. Guidelines for resubmitting your figure files are available below the reviewer comments at the end of this letter.

If applicable, we recommend that you deposit your laboratory protocols in protocols.io to enhance the reproducibility of your results. Protocols.io assigns your protocol its own identifier (DOI) so that it can be cited independently in the future. For instructions see: <https://journals.plos.org/plosone/s/submission-guidelines#loc-laboratory-protocols>. Additionally, PLOS ONE offers an option for publishing peer-reviewed Lab Protocol articles, which describe protocols hosted on protocols.io. Read more information on sharing protocols at [https://plos.org/protocols?utm\\_medium=editorial-email&utm\\_source=authorletters&utm\\_campaign=protocols](https://plos.org/protocols?utm_medium=editorial-email&utm_source=authorletters&utm_campaign=protocols).

We look forward to receiving your revised manuscript.

Kind regards,

Sergio Villamayor-Tomas  
Academic Editor  
PLOS ONE

## Journal Requirements:

Please review your reference list to ensure that it is complete and correct. If you have cited papers that have been retracted, please include the rationale for doing so in the manuscript text, or remove these references and replace them with relevant current references. Any changes to the reference list should be mentioned in the rebuttal letter that accompanies your revised manuscript. If you need to cite a retracted article, indicate the article's retracted status in the References list and also include a citation and full reference for the retraction notice.

[Note: HTML markup is below. Please do not edit.]

Reviewers' comments:

Reviewer's Responses to Questions

### Comments to the Author

1. If the authors have adequately addressed your comments raised in a previous round of review and you feel that this manuscript is now acceptable for publication, you may indicate that here to bypass the "Comments to the Author" section, enter your conflict of interest statement in the "Confidential to Editor" section, and submit your "Accept" recommendation.

Reviewer #1: All comments have been addressed

Reviewer #2: (No Response)

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2. Is the manuscript technically sound, and do the data support the conclusions?

The manuscript must describe a technically sound piece of scientific research with data that supports the conclusions. Experiments must have been conducted rigorously, with appropriate controls, replication, and sample sizes. The conclusions must be drawn appropriately based on the data presented.

Reviewer #1: Yes

Reviewer #2: Partly

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3. Has the statistical analysis been performed appropriately and rigorously?

Reviewer #1: Yes

Reviewer #2: N/A

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4. Have the authors made all data underlying the findings in their manuscript fully available?

The [PLOS Data policy](#) requires authors to make all data underlying the findings described in their manuscript fully available without restriction, with rare exception (please refer to the Data Availability Statement in the manuscript PDF file). The data should be provided as part of the manuscript or its supporting information, or deposited to a public repository. For example, in addition to summary statistics, the data points behind means, medians and variance measures should be available. If there are restrictions on publicly sharing data—e.g. participant privacy or use of data from a third party—those must be specified.

Reviewer #1: Yes

Reviewer #1: Yes

Reviewer #2: No

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5. Is the manuscript presented in an intelligible fashion and written in standard English?

PLOS ONE does not copyedit accepted manuscripts, so the language in submitted articles must be clear, correct, and unambiguous. Any typographical or grammatical errors should be corrected at revision, so please note any specific errors here.

Reviewer #1: Yes

Reviewer #2: No

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6. Review Comments to the Author

Please use the space provided to explain your answers to the questions above. You may also include additional comments for the author, including concerns about dual publication, research ethics, or publication ethics. (Please upload your review as an attachment if it exceeds 20,000 characters)

Reviewer #1: The manuscript should be accepted for publication in PLOS ONE

Reviewer #2: The authors have addressed several of the problems in the paper. However, some errors still need to be corrected. See below the detected problems and some suggestions for improvement.

1. The figure legend is missing in Figure 1.
2. The resolution of the figures is very low, which makes it difficult or impossible to read the text in them.

From Figure 1:

From figure 2:

From figure 3:

3. The authors have introduced several clarifications to the acronyms, but not a Glossary of them. I strongly recommend its introduction to ease reading.

4. Authors should add the name of Level N (Average Society) in Tables 2 and 3, otherwise the table is quite confusing as is not self-explanatory (no reference to what means the number in the first column). I also suggest that they maintain the color format in the two tables (now in one number are in gray and labels in white and in the other table the opposite).

5. Reference 48 is incorrect (Fischer-Kowalski M, is not an author of this report).

Please correct:

Giampietro M, Cadillo Benalcazar JJ, Di Felice LJ, Manfroni M, Pérez Sánchez L, Renner A, Ripa M, Velasco Fernández R & Bukkens SGF (2021), Report on the Experience of Applications of the Nexus Structuring Space in Quantitative Storytelling, MAGIC (H2020–GA 689669) Project Deliverable 4.4, Revision (version 2.0). First published 30 August 2020, revised 25 January 2021. Available at: <https://magic-nexus.eu/documents/deliverable-44-report-nexus-structuring-space>

6. Figure 4 is explained on page 11 without any reference to it and it didn't appear until page 15. Moreover, Figure 4 repeats categories with different meanings/numbers (Rural Houses are at level n-2 including subsistence farming and in n-3 without it). The split is relevant, but categories can't be the same as they are referring to different issues.

7. The flow-fund model from G-R still not well quoted: line 276 "stock-flow model [8]"

7. The flow fund model from C. F. still not well quoted. line 276 stock flow model [9]

8. In the section Results, I highly recommend compiling all the data from the case study in an End-use matrix, it is, a matrix wherein the row you have the different levels and categories and in the columns, you have the funds (HA), flow-fund ratios (WMR) and flows (NWU):

This presentation of the metabolic pattern across scales and levels helps to show the rationale of the split and quickly identify the patterns (two key issues in MuSIASEM). See some examples in: <https://www.sciencedirect.com/science/article/pii/S0360544218314191> (Tables 4, 5 and 6) or in [https://magic-nexus.eu/sites/default/files/files\\_documents\\_repository/d4.4\\_nexus-structuring-space\\_revision\\_25012021.pdf](https://magic-nexus.eu/sites/default/files/files_documents_repository/d4.4_nexus-structuring-space_revision_25012021.pdf) (Figure 18). Extra columns of HA and NWU could be also added to express them as % and/or hours per capita or liters per capita.

9. Authors took out all the discussion of value-added generated by the different activities. The paper is OK as it is, but I recommend reconsidering their decision, as these numbers and analysis but in relation to human activity is very valuable. This would allow seeing to compare the pattern of water use (WMR) with the pattern of value-added generation per hour of human activity (Economic Job Productivity), two key indicators in MuSIASEM for discussing the metabolic performance of a society.

10. In line 340, reference 20 is shown twice.

11. Data from other case studies (Spain and Lima) are totally wrong!!! Please revise all the numbers from Table 1 and Table 2. Revise also the overall discussion.

For example, the highest WMR is the one of the agricultural sector (9.7 l/h for Spain instead 21,7 l/h that authors put in the table). The one for Industry is 0.82 l/h instead of the 848.9 l/h authors show.

The numbers from Lima are also wrong, Paid work is 12,09 and Households 4,7, Services has a WMR f 6,92 l/h instead of 28,6!

Please, double check also your calculation for data in Figure 4, some data seems too high (e.g. WMR in the Manufacturing industry sector is 848.9 l/h, almost the same as agriculture!)

12. In line 434 authors stake that “This information showed that the metabolic pattern of Cuenca is threatening the metabolic pattern of the ecosystem”. What specific information are you referring to? In which sense it is threatening the metabolic pattern of the ecosystem? It is higher the WMR in consumption than the water coming into the ecosystem? I some aquifer being overexploited? Which data is supporting or indicates that?

13. Authors should explain the differences between viability, feasibility, and desirability analysis in MuSIASEM in the methods and justify why they are doing a viability analysis. Then in the discussion and conclusions, they have to discuss the framework with their results and then better justify why there is required to do a feasibility and desirability analysis in the future to complement the current one in the conclusions (lines 447-452).

14. It seems that the English have not been reviewed and there are still typos:

- Line 97: “less addressed though political, social and environmental matters”
- Line 140: “where highest precipitation”
- Line 219: “ Levels N refers to the consumptive Uses”
- Line 276. “by hours of human activity in the (stock-flow model [8])” missing “fund”? T

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7. PLOS authors have the option to publish the peer review history of their article ([what does this mean?](#)). If published, this will include your full peer review and any attached files.

If you choose “no”, your identity will remain anonymous but your review may still be made public.

**Do you want your identity to be public for this peer review?** For information about this choice, including consent withdrawal, please see our [Privacy Policy](#).

Reviewer #1: No

Reviewer #2: **Yes:** Raúl Velasco-Fernández

[NOTE: If reviewer comments were submitted as an attachment file, they will be attached to this email and accessible via the submission site. Please log into your account, locate the manuscript record, and check for the action link "View Attachments". If this link does not appear, there are no attachment files.]

While revising your submission, please upload your figure files to the Preflight Analysis and Conversion Engine (PACE) digital diagnostic tool, <https://pacev2.apexcovantage.com/>. PACE helps ensure that figures meet PLOS requirements. To use PACE, you must first register as a user. Registration is free. Then, login and navigate to the UPLOAD tab, where you will find detailed instructions on how to use the tool. If you encounter any issues or have any questions when using PACE, please email PLOS at [figures@plos.org](mailto:figures@plos.org). Please note that Supporting Information files do not need this step.

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